

Apr 2024



#### Young Inventors Show Off Their Talents at CityU Science Patent Challenge

Co-organised by the College of Science (CSCI) and the Office of the Provost and Deputy President, the CityU Science Patent Challenge 2023-24 has come to the climax of the Final Pitch on 17 February, with the team from Lung Kong World Federation School Limited Lau Wong Fat Secondary School crowned the Gold Award. Two ideas from the team of St. Stephen's Girls' College reached the finals and were eventually awarded a Silver and a Bronze Award, respectively. German Swiss International School's team won the newly established "Best Presentation Award". Read more

#### **News and Achievements**



#### Micropollutants Research Named Best Paper by American Chemical Society

The research paper entitled "Which Micropollutants in Water Environments Deserve More Attention Globally?" has been selected by the American Chemical Society in the category "Critical Review" in the 2022 Environmental Science and Technology Best Paper Awards. Professor Kenneth Leung, Chair Professor of Environmental Toxicology and Chemistry from the Department of Chemistry, as well as the Director of CityU's State Key Laboratory of Marine Pollution (SKLMP), is one of the co-authors. The research team proposed novel metadata analysis and identified 53 micropollutants of priority concerns, such as pharmaceuticals and pesticides. Research results have profound implications for managing listed chemicals in aquatic environments worldwide. Read more

## Three Faculty Members Awarded RGC Collaborative Research Fund

2023/24

Professor Guangyu Zhu and Professor Zonglong Zhu, Professor and Associate Professor from the Department of Chemistry, have been awarded the Collaborative Research Project Grants under the Collaborative Research Fund (CRF) in 2023/24. Professor Kenneth Leung, Chair Professor from the same department, was awarded RGC's Young Collaborative Research Grant together with his Co-PI, Professor Zhiyuan Zeng, from the Department of Materials Science and Engineering. Grants awarded reached a total of around \$18 million. Read more





## Career Fair 2024 Connects Students and Employers

Jointly organised by the College of Science and College of Engineering, Career Fair 2024 was a big success. Students were provided a chance to meet with a record-breaking 69 employers from different industries. A total of over 3,000 vacancies were solicited for students from the two Colleges. Read more

# Physics Faculty Members Served As Jurors in Young Physicists' Tournament

Professor Oscar Dahlsten, Professor Denver Li, Professor Haixing Li and Professor Sunny Wang from the Department of Physics served as jurors in the Hong Kong Young Physicists' Tournament (HKYPT) 2024. The HKYPT tests participants' ability to solve complicated real-world physics problems. Read more





#### **Lecture on the Choice of Outcome Scale in Non-Inferiority Trials**

On 28 February, the Department of Biostatistics invited Professor Richard Chappell, Professor in both the Department of Statistics and the Department of Biostatistics and Medical Informatics at the University of Wisconsin-Madison, to deliver a Distinguished Visiting Professor Lecture titled "Delta what? Choice of outcome scale in non-inferiority trials". Professor Chappell emphasised the importance of selecting the appropriate Delta value, which is critical as it determines the interpretation of the trial results.

#### American Physical Society March Meeting Debut Section in Hong Kong

The Department of Physics made history by hosting a satellite meeting of the 2024 American Physical Society (APS) March Meeting on 8 March. This is the first time the renowned event has a section being held in Hong Kong, providing a unique platform for physicists to showcase their research and foster international collaborations. With a focus on cutting-edge topics such as optical physics and quantum physics, the conference attracted around 100 attendees. Read more





## Seven New Electives for Chemistry Master's Programme

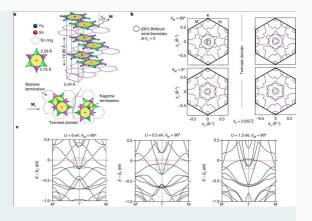
To enable students to delve deeper into areas of chemistry that resonate with career goals and aspirations, the Department of Chemistry will launch 7 new elective courses for the Master's Programme starting from 2024-2025. The new elective options span different disciplines within chemistry, including food chemistry, environmental health & risk assessment, cosmetic product development and formulation, modern synthetic chemistry, sustainable energy conversion and storage. This expansion of course offerings will not only enhance the learning experience but also contribute to the overall attractiveness of the programme for prospective candidates with diverse interests and backgrounds. Read

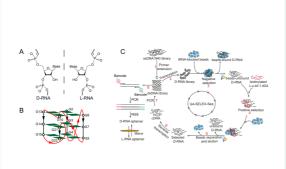
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#### Research

### Research Participated by Physics Faculty Member Published in *Nature*

Professor Junzhang Ma, Assistant Professor of the Department of Physics, participated in a research recently published in *Nature*. Titled "Anomalous electrons in a metallic kagome ferromagnet", the paper reported on the research team's combination of high-resolution spectroscopy with single domain selection, which provided an unprecedented opportunity to examine the quasiparticles in a strongly correlated kagome metal. Read more



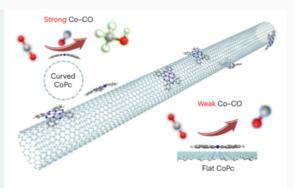


#### Development of Novel Aptamers Unlocks Opportunities for Treatment of Cancers and Neurological Diseases

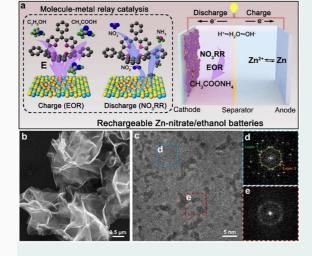
Professor Chun-kit Kwok, Associate Professor in the Department of Chemistry and his research team recently built a new platform to select L-RNA aptamers that can target functional G-quadruplexes (G4) structures. G4 is a special structure in DNA and RNA and has been associated with cancers and neurological diseases. The team found an L-RNA aptamer that binds specifically to a specific topology of the G4 structure. The findings may be beneficial for developing new drugs and treatments for G4-related diseases, like cancers. Read more

#### **Curved Carbon Nanotubes Enhance Electrocatalysts for Carbon Neutrality**

A study co-led by Professor Ruquan Ye, Associate Professor in the Department of Chemistry, found that single-walled carbon nanotubes are excellent substrates for enhancing greenhouse gas conversion through molecular curvature. By using these nanotubes as support to induce strain on an electrocatalyst, the efficiency of carbon dioxide reduction to methanol can be significantly improved. This breakthrough opens avenues for developing curved molecular electrocatalysts to efficiently convert carbon dioxide into useful chemicals and fuels, thus reducing carbon emissions. Read more



The curved molecule/single-walled carbon nanotube surface was developed for a CO<sub>2</sub> reduction reaction to achieve total CO<sub>2</sub>-to-methanol efficiency of 60%. (Photo credit: Professor Ye Ruquan's research group /City University of Hong Kong)



#### Efficient Catalyst Enables Highperformance Batteries for Sustainable Energy Storage

A research team co-led by Professor Zhanxi Fan, Assistant Professor in the Department of Chemistry, have developed a high-performance rechargeable zinc-nitrate/ethanol battery by introducing an innovative catalyst. That catalyst exhibited remarkable capabilities in both the electrocatalytic nitrate reduction reaction and ethanol oxidation reaction in a neutral medium, overcoming the monofunctional limitations of traditional metal-based solid catalysts and providing a valuable reference for the design of sustainable energy storage in the future. Read more









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